

REMARKS

Claim 5 has been canceled. New claim 22 has been added. Certain aspects of the invention previously recited by claim 5 have been incorporated generally into new independent claim 22. No new matter has been added. Claims 6, 7, 9, 10, 12, 13 and 21 have been amended. Claims 6, 9, 10, 12, and 21 have been amended to depend on new independent claim 22, which replaces canceled claim 5. No new matter has been added. Claims 6-22 are currently pending in the present application. Reexamination and reconsideration of the application are respectfully requested.

REJECTION OF CLAIMS 5-6, 9, 13-15, 17-19 and 21 UNDER 35 U.S.C. 102

Claims 5-6, 9, 13-15, 17-19 and 21 are rejected under 35 U.S.C. 102(e) for the reasons set forth on pages 2-4 of the Action. Specifically, claims 5-6, 9, 13-15, 17-19 and 21 are rejected under 35 U.S.C. 102(e) as being anticipated by Watanabe et al. (US 2002/0034934 A1), which is hereinafter referred to as "Watanabe" or as "the Watanabe reference."

The rejections under 35 U.S.C. 102(e) are respectfully traversed, at least insofar as applied to the new and amended claims, and reconsideration and reexamination of the application is respectfully requested for the reasons set forth herein below.

The Federal Circuit has ruled, "Under 35 U.S.C. §102, anticipation requires that each and every element of the claimed invention be disclosed in the prior art. . . . In addition, the prior art reference must be enabling, thus placing the allegedly disclosed matter in the possession of the public." Akzo N.V. v. United States Int'l Trade

Comm'n, 1 USPQ 2d 1241, 1245 (Fed. Cir. 1986), cert. denied, 482 U.S. 909 (1987).

[emphasis added.]

Furthermore, the Federal Circuit has held, "Anticipation requires the disclosure in a single prior art reference of each element of the claim under consideration." W.L. Gore & Assocs. v. Garlock, Inc., 220 USPQ 303, 313 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984). [emphasis added.]

Pages 2 to 4 of the Action identify those elements of the Watanabe reference that describe or otherwise anticipate the component as claimed. Specifically, the Office Action asserts that high frequency module 10, illustrated in FIG. 1 of the Watanabe reference, teaches the component as claimed.

It is respectfully submitted that the Watanabe reference, whether alone or in combination with Harada, fails to teach or suggest each and every element of the component as claimed. Regarding independent claim 17, the Watanabe reference, whether alone or in combination with Harada, fails to teach or suggest inter alia the following claim limitation: "a filter that includes a differential input and a differential output." High pass filter 11 has a first single ended terminal and a second single-ended terminal. Specifically, the first terminal 111 of the high-pass filter 11 is connected to an antenna ANT, and a second terminal 112 of the high-pass filter 11 is connected to a first terminal 121 of the high-frequency switch 12. Consequently, the high pass filter 11 of Watanabe does not fairly teach or suggest the filter as claimed.

The dependent claims 18-20 incorporate all the limitations of independent claim 17. In this regard, the dependent claims also add additional limitations, thereby making

the dependent claims a fortiori and independently patentable over the cited reference. For example, regarding claim 18, the Watanabe reference, whether alone or in combination with Harada, fails to teach or suggest inter alia the following claim limitation: "wherein the single ended port of the balun is coupled to the singled ended input of the component." In sharp contrast, the single ended port of the Tx balun 13 and the single ended port of the Rx balun 14 are both coupled to the high-frequency switch 12 and not the single ended input of the component as claimed. Furthermore, regarding claim 18, the Watanabe reference, whether alone or in combination with Harada, fails to teach or suggest inter alia the following claim limitation: "wherein the differential input of the filter is coupled to the differential port of the balun." In sharp contrast, the differential ports of the Tx balun 13 and Rx balun 14 are coupled to transmitter circuit Tx and the receiver circuit Rx, respectively, and not to the filter as claimed.

Regarding claim 19, the Watanabe reference, whether alone or in combination with Harada, fails to teach or suggest inter alia the following claim limitation: "wherein the differential port of the balun is coupled to the differential output of the filter." In sharp contrast, the differential ports of the Tx balun 13 and Rx balun 14 are coupled to transmitter circuit Tx and the receiver circuit Rx, respectively, and not to the filter as claimed.

Furthermore, the Watanabe reference, whether alone or in combination with Harada, fails to teach or suggest inter alia the following claim limitation: "wherein the single ended port of the balun is coupled to the single ended output of the component."

In sharp contrast, the single-ended output of the Tx balun 13 and the single-ended output of Rx balun 14 are coupled to the high-frequency switch 12 and not to the single ended output of the component as claimed.

Regarding independent claim 13, the Watanabe reference, whether alone or in combination with Harada, fails to teach or suggest inter alia the following claim limitation: “a balanced to unbalanced circuit (balun) that includes a single ended port directly coupled to the single ended output of the filter and a differential port.”

The baluns 13, 14 and high pass filter 11 of Watanabe's module are not coupled together. The baluns 13, 14 of Watanabe are implemented as follows. Watanabe states, “The first, second, and third lines 13a, 13b, and 13c of the transmitter-side balun 13 are preferably defined by the strip line electrodes SL14, SL6, and SL8, respectively. The first, second, and third lines 14a, 14b, and 14c of the receiver-side balun 14 are preferably defined by the strip line electrodes SL15, SL5, and SL7, respectively.”

It is noted that the strip line electrodes SL8 and SL6 for balun 13 and the strip line electrodes SL7 and SL5 for balun 14 are located on the fourth layer (see FIG. 6D). The strip line electrodes SL 14 and SL 15 are located on the sixth layer (see FIG. 7B). However, it is noted that these strip lines are not directly coupled to the filter 11 as claimed. In contrast, the components of filter 11 of Watanabe are located on different layers and do not appear to be coupled to the balun strip lines.

For example, the capacitors (C11, C12, and C13), especially C11 and C13, which are coupled respectively to terminals 111 and 112 are implemented as follows: “The capacitor C11 is preferably defined by the capacitor electrodes Cp2 and Cp7, the

capacitor C12 is preferably defined by the capacitor electrodes Cp1 to Cp3, the capacitor C13 is preferably defined by the capacitor electrodes Cp3 and Cp8.” It is noted that these capacitor electrodes are located on the seventh, eighth, and ninth layers (see FIG. 7C, 7D, & 8A;) and do not appear to be coupled to the strip lines that define the baluns 13, 14 noted previously.

Regarding new independent claim 22, the Watanabe reference, whether alone or in combination with Harada, fails to teach or suggest inter alia the following claim limitation: “a second structure that includes a first electrode coupled to the second electrode of the first structure,” as claimed.

Many of the arguments previously presented in connection with independent claim 13 are equally applicable here. Furthermore, Watanabe’s high-frequency module 10 that includes a plurality of different components (e.g., a high-pass filter 11, a high-frequency switch 12, and two baluns (i.e., a transmitter-side balun 13 and a receiver-side balun 14)) does not fairly teach the component according to the invention that integrates a balun with a filter.

Moreover, the high-frequency module 10 of Watanabe has different input and output terminals than the component as claimed. For example, it is noted that the high-frequency module 10, as illustrated in FIG. 1, illustrates a high-frequency module 10 that includes five terminals (e.g., first to fifth terminals 101 to 105). In contrast, the component as claimed has a single input and a differential output as claimed.

In view of the foregoing, it is respectfully submitted that Watanabe reference, whether alone or in combination, fails to teach or suggest the component as claimed.

REJECTION OF CLAIMS 7-8, 10-11, and 16-20 UNDER 35 U.S.C. 103(a)

Claims 7-8, 10-11, and 16-20 are rejected under 35 U.S.C. 103(a) for the reasons set forth on pages 4 and 5 of the Action. Specifically, claims 7-8, 10-11, and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. (US 2002/0034934 A1) in view of Harada (U.S. Pat. No. 5,949,299), which is hereinafter referred to as “Harada” or as “the Harada reference.”

Regarding claims 7-8, the Action states that “it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to substitute high pass filter 11 of Watanabe with a full-ladder resonator-based filter and a lattice resonator-based filter since these filters are known and the selection of any of these filters would be within the level of ordinary skill in the art.”

This position is respectfully contested for the following reasons. First, Watanabe discloses three types of filters for element 11: a high pass filter (FIG. 2), a notch filter (FIG. 10), and a low pass filter (FIG. 12). However, Watanabe fails to fairly teach or suggest a full-ladder resonator-based filter or lattice resonator-based filter as claimed. Second, although full-ladder resonator-based filters or lattice resonator-based filters by themselves may be known generally by those of ordinary skill in the art, which itself is not conceded, it is respectfully submitted that the incorporation of these types of filters with a balun as a single component according to the invention, as claimed, is not obvious.

The Action further states that Watanabe does not disclose a balun circuit that includes lumped elements as claimed by claims 10, 11, 16 and 20. However, the Action cites Harada (FIGS. 1A to 2H and col. 2, lines 9-15) for teaching the deficiencies of Watanabe. The Action further states "it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to implement the balun circuit as taught by Watanabe et al. with inductors and capacitors to reduce the chip area of the component." The Action further cites col. 2, lines 9-15 of Harada for the motivation to combine the Watanabe and Harada references.

The rejections under 35 U.S.C. 103 are respectfully traversed, at least insofar as applied to the new and amended claims, and reconsideration and reexamination of the application are respectfully requested for the reasons set forth hereinbelow.

The combination of the implementation of a balun of Harada in the module of Watanabe is contested as improper for the reasons advanced below. However, even if this combination were proper, which is not conceded, the resulting combination would still fail to fairly teach or suggest the claimed invention.

For example, regarding claim 11, the elements for performing impedance transformation as claimed are not fairly taught by Harada's elements shown in FIG. 1A to 2H since these are utilized by Harada to implement or realize the balun. There does not appear to be any teaching that additional lumped elements are added for impedance transformation, the benefits of which are described on pages 10 and 11 of the specification with reference to FIG. 10.

THE PROPOSED COMBINATION IS BASED ON IMPERMISSIBLE USE OF THE  
CLAIMED INVENTION AS A TEMPLATE TO PIECE TOGETHER THE  
TEACHINGS OF THE WATANABE REFERENCE AND THE HARADA  
REFERENCE

It is respectfully submitted that the Watanabe and Harada references are improperly combined. It appears that the Action uses improper hindsight to selectively pick pieces from the Watanabe reference and pieces from the Harada reference to arrive at the claimed invention.

Although the Action suggests that the balun of Watanabe can be modified with FIGS. 1A to 2H of Harada, the Federal Circuit has stated, “The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification.” In re Fritch, 972 F.2d 1260, 23 USPQ 2d 1780, 1783–84 (Fed. Cir. 1992) [emphasis added].

The Federal Circuit has further held In re Fritch, 972 F.2d 1260, 23 USPQ 2d 1780, 1783 (Fed. Cir. 1992):

In proceedings before the Patent and Trademark Office, the Examiner bears the burden of establishing a prima facie case of obviousness based upon the prior art. ... “[The Examiner] can satisfy this burden only by showing some objective teaching in the prior art ... would lead that individual to combine the relevant teachings of the references. In re Fine, 837 F.2d 1071, 1074, 5 USPQ 2d 1596, 1598 (Fed. Cir. 1988). [emphasis added.]



Consequently, it appears that the current patent application has been improperly used as a basis for the motivation to combine or modify the components selected from the Watanabe and the Harada references to arrive at the claimed invention. Stated differently, the proposed combination of the cited references appear to be based on hindsight since the cited references do not teach or suggest a motivation to combine the respective elements of each reference in the manner proposed by the Action.

The Federal Circuit has held, “It is impermissible to use the claimed invention as an instruction manual or “template” to piece together the teachings of the prior art so that the claimed invention is rendered obvious. This court has previously stated, “[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.” (quoting *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988)), *In re Fritch*, 23 USPQ 2d 1780, 1784 (Fed. Cir. 1992). [emphasis added.]

Furthermore, the Federal Circuit has held, “The combination of elements from non-analogous sources, in a manner that reconstructs the applicant's invention only with the benefit of hindsight, is insufficient to present a prima facie case of obviousness. There must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge can not come from the applicant's invention itself.” *In re Oetiker*, 977 F.2d 1443, 24 USPQ 2d 1443, 1446 (Fed. Cir. 1992)

Accordingly, hindsight reconstruction may not be used to pick a component from Watanabe and another component from Harada to arrive at the invention as

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claimed. Accordingly, it is respectfully requested that the rejection of claims 7, 8, 10-11 and 16-20 under 35 U.S.C. 103(a) be withdrawn.

In view of the foregoing, it is respectfully submitted that Watanabe reference, whether alone or in combination with the Harada reference, fails to teach or suggest the component as claimed. Accordingly, it is respectfully requested that the claim rejections under 35 U.S.C. section 103(a) be withdrawn.

#### Conclusion

For all the reasons advanced above, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the pending claims are requested, and allowance is earnestly solicited at an early date. The Examiner is invited to telephone the undersigned if the Examiner has any suggestions, thoughts or comments, which might expedite the prosecution of this case.

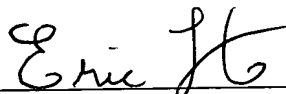
Respectfully submitted,



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(Date)